Two spectacularly spiny alluaudias

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by Colin C. Walker

Introducing *Alluaudia*

Alluaudia belongs to the Didiereaceae, a very small family of succulents encompassing just 22 species in 7 genera (The Plant List, 2019). Until about a decade ago this family was considered to be endemic to Madagascar. However, recent molecular evidence has resulted in expansion of the family to include three genera from southern Africa (7 species of *Ceraria* and 2 species of *Portulacaria*) and north-east tropical Africa (2 species of *Calyptrotheca*). Regrettably this expanded family is therefore no longer one of the iconic Madagascan endemics.

The 11 Madagascan species in 4 genera are all endemic to the island. These occur in the dry, semi-desert south and south-west of the island where they form the dominant component of what is termed the Didiereaceae-*Euphorbia* bush, a characteristic vegetation type unique to Madagascar, known colloquially as the spiny forest. The Madagascan Didiereaceae are all very spiny and deciduous, with leaves appearing in the rainy season and falling at the start of the dry season. Indeed they have been described as 'The cacti of the Old World' (Rowley, 1992).

My plants in the UK are kept in a conservatory and these are summer growers when I water them modestly. In the winter when they are leafless I keep them at least 10°C and give them an occasional water.

Flowers are rarely produced in pot culture since many of the plants need to get quite large before reaching flowering size. So these plants are not grown for their outstanding flowers (which are somewhat insignificant if flowering is achieved)!

There are just 6 species of *Alluaudia*. These are all shrubs or even small trees, some growing as tall as 15 m at maturity. They produce two types of branches, each with its own leaf type. The young or long branches have leaves that are horizontally flattened, whereas the short branches, analogous to the areoles of cacti, have leaves that are flattened vertically. All species are spiny, some viciously so.

The generic name commemorates Charles Alluaud, French entomologist who collected animals and plants in Madagascar four times, the first visit being in 1893.

Here just two species are showcased: *Alluaudia procera* and *A. montagnacii*.

Fig. 1. *Alluaudia procera* about 90 cm tall in a 24cm diameter pot.

Alluaudia procera

This species is the most widely distributed in Madagascar and is also the most commonly encountered in cultivation. As a young potted plant it branches freely (Fig. 1) and hence is shrub-like. The branches root fairly easily from cuttings, hence its popularity. It can also be used as grafting stock for the trickier members of the family, although I've personally no experience of this.

The young stems – technically the long branches – grow relatively quickly and produce horizontally flattened leaves (Fig. 2). Spines are fierce and about 1 cm long. The leaf is produced below the spine and this point on the stem will become the areole or short branch that will produce the mature, vertically flattened leaves in future years, shown on the older portions of the lower branches in Fig. 1.

The name *procera* comes from the Latin '*procerus*' meaning 'tall' or 'slender' from the shape of the mature plant which is very different to that of the juvenile plant I grow in a pot, so the shrub is transformed into a tree as it ages. With age it has a stout trunk and a slender modestly branched crown that can form a tree to 15 m tall all covered with leaves in the growing season. Flowers are very small and white but produced in dense, clustered inflorescences.

Fig. 2. Close up of young stems of *Alluaudia procera* with only juvenile leaves.

Fig. 3. Section of stem of *Alluaudia montagnacii* with only mature leaves.

Alluaudia montagnacii

This species is similar to *A. procera* in overall growth and characteristic features but is considerably more spiny (Fig. 3). My plant is formed of a single unbranched stem about 95 cm tall. The spines are densely arranged and up to 2.5 cm long, broad at the base, grey with darker tips. The mature vertically flattened leaves are usually paired and produced by the short branches (areoles) below the spines. In my opinion this is the most attractive of the Madagascan Didiereaceae and its dense spination is equal in appeal to anything produced by a cactus!

At maturity it forms a modestly branched tree up to 10 m tall and has a trunk with a basal diameter of around 50 cm.

Again like *A. procera* its small white flowers are produced in dense clusters but I don't ever expect these to be produced by my pot-grown specimen.

Compared to *A. procera*, *A. montagnacii* is relatively slow growing, at least under my conditions where it is restricted to a pot.

This is the rarest of the alluaudias and indeed of the whole family, both in the wild and in cultivation. It is known only from its type locality at Itampolo on the south-west coast of Madagascar. Fortunately it was distributed in 1981 as ISI 1246 from which my plant originated.

Vegetatively the plant is very similar to *Alluaudia ascendens*, whereas its inflorescence and flowers are closer to those of *A. procera*. This, together with its very localised distribution and hence rarity has led to the suggestion that this species may in fact be a natural hybrid (Rowley, 1992).

This species was named '*montagnacii*' after the French botanist Paul René Montagnac who first introduced plants into cultivation in the famous garden Les Cedres in France.

Fig. 4. *Alluaudia procera* with plastic ring-tailed lemur simulating life in the spiny forest of southern Madagascar.

Alluaudias and lemurs

Most of us will be familiar with images of the succulent rich spiny forest in southern Madagascar that is home to the endearing, similarly endemic, lemurs. Scenes of lemurs leaping through the spiny branches have been made famous by natural history TV programmes, especially those fronted by David Attenborough. I have never visited Madagascar, so here I can merely offer you my own 2-D simulation using a plastic model of a ring-tailed lemur *(Lemur catta)* purloined from my daughter's zoo animal collection (Fig. 4). It never ceases to amaze me how in the wild these animals can walk, climb, run and jump amongst these fiercely spiny forests of which alluaudias are dominant components.

For those wanting to know more about alluaudias specifically or the Madagascan Didiereaceae more generally, the guide by Rowley (1992) is an excellent introduction, whereas all the species are beautifully illustrated by many habitat photos in Rauh (1998).

References

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Colin C. Walker
c.walker702@btinternet.com